

ABSTRACT

According to the invention, systems, apparatus and methods are disclosed for optically enabling a circuit component in a large scale integrated circuit. In one embodiment, the invention is a circuit comprising a light sensing device for producing a signal in response to sensing light, an optic function subcircuit, and a switch connected to the light sensing device and to the optic function subcircuit for activating the optic function subcircuit when light is sensed. The light sensing device is preferably a phototransistor and a light sensing circuit is preferably placed between the light sensing device and the switch for amplifying and conditioning the light sensing signal. The optic function subcircuit can be an optical modulator, an optical receiver or any other device that is to be operated and powered only when incident light is present. The switch can be a logic gate or a transistor switch coupled to the light sensing device and to an input to the optic function subcircuit, such as a power supply or a clock input, for alternately enabling and disabling the input to the optic function subcircuit.

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